

WHAT IS CLAIMED IS:

1. A program execution device of executing a program described in a prescribed language, comprising:

a compressed code storing portion storing a code of said program compressed on a prescribed unit basis;

an expanding portion connected to said compressed code storing portion for expanding said compressed code stored in said compressed code storing portion;

a code storing portion connected to said expanding portion for storing the code expanded by said expanding portion; and

an interpreter portion connected to said code storing portion for interpreting said expanded code for execution.

2. The program execution device according to claim 1, wherein said prescribed language is an object oriented language and said prescribed unit is a method.

3. The program execution device according to claim 1, wherein said prescribed unit is a series of instructions not containing branching in the program.

4. The program execution device according to claim 1, wherein said prescribed unit is an instruction.

5. The program execution device according to claim 1, further comprising a compression mode determining portion connected to said compressed code storing portion for determining a compression mode of said code based on said compressed code, said expanding portion being connected to said compression mode determining portion for expanding said compressed code and storing in said code storing portion in accordance with an output from said compression mode determining portion.

6. A program execution device of executing a program described in an object oriented language, said program being described in a code other than a code native to said program execution device, comprising:

5 a compressed code storing portion storing a code of said program compressed on a method basis;

an expanding portion connected to said compressed code storing portion for expanding said compressed code;

a converting portion connected to said expanding portion for converting said expanded code to a native code;

10 a native code storing portion connected to said converting portion for storing the native code output from said converting portion; and

a native code executing portion connected to said native code storing portion for executing said native code.

7. The program execution device according to claim 6, wherein said native code storing portion is formed of a cache memory.

8. A program execution device of executing a program described in an object oriented language, comprising:

a code storing portion storing a code of a method of said program;

a native code storing portion storing a native code of the method;

5 a compressed native code storing portion storing a compressed native code obtained by compressing the native code of the method;

a first determining portion connected to said native code storing portion for determining if a native code of a desired method is stored in said native code storing portion;

10 a second determining portion connected to said compressed native code storing portion for determining if a compressed native code of said desired method is stored in said compressed native code storing portion;

15 a native code storage controlling portion connected to said first and second determining portions, said compressed native code storing portion, said code storing portion and said native code storing portion for selectively executing expansion of the compressed native code stored in said

compressed native code storing portion or conversion of the code stored in said code storing portion to a native code and storing the resultant native code to said native code storing portion in accordance with outputs from said first and second determining portions;

a native code executing portion connected to said native code storing portion for executing the native code stored in said native code storing portion; and

a native code compressing and storing portion connected to said second determining portion, said native code storing portion and said compressed native code storing portion for compressing the executed native code and storing it in said compressed native code storing portion in accordance with the output from said second determining portion.

9. The program execution device according to claim 8, further comprising a compression mode storing portion storing a compression mode of the compressed native code stored in said compressed native code storing portion on a method basis, wherein said native code storage controlling portion is connected to said compression mode storing portion for selectively executing expansion of the compressed native code stored in said compressed native code storing portion in accordance with the compression mode stored in said compression mode storing portion or conversion of the code stored in said code storing portion to a native code and storing the resultant native code in said native code storing portion, and

said native code compressing and storing portion is connected to said compression mode storing portion for compressing the executed native code by a compression mode determined by a predetermined method, storing the compressed native code in said compressed native code storing portion and storing said compression mode in said compression mode storing portion in accordance with the output from said second determining portion.

10. The program execution device according to claim 8, wherein said native code compressing and storing portion compresses with highest priority a native code converted first of methods stored in said native code

storing portion.

11. The program execution device according to claim 8, wherein said native code compressing and storing portion compresses with highest priority a native code having a lowest execution frequency of methods stored in said native code storing portion.

12. The program execution device according to claim 8, wherein said native code compressing and storing portion compresses with highest priority a native code having the largest size of methods stored in said native code storing portion.

13. The program execution device according to claim 8, wherein said native code compressing and storing portion compresses with highest priority a native code having a highest compression ratio of methods stored in said native code storing portion.

14. The program execution device according to claim 8, wherein said native code compressing and storing portion deletes a compressed native code with a lowest execution frequency of methods stored in a compressed native code storage region when there is no more space in said compressed native code storage region.

15. The program execution device according to claim 8, wherein said native code compressing and storing portion deletes a compressed native code having a largest size of methods stored in a compressed native code storage region if there is no more space in said compressed native code storage region.

16. The program execution device according to claim 8, wherein said native code compressing and storing portion deletes a compressed native code with a lowest compression ratio of methods stored in a compressed native code storage region when there is no more space in said

5 compressed native code storage region.

17. The program execution device according to claim 8, wherein
said native code compressing and storing portion deletes a compressed
native code compressed first of methods stored in a compressed native code
storage region when there is no more space in said compressed native code
5 storage region.

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